

## Patent Abstracts of Japan

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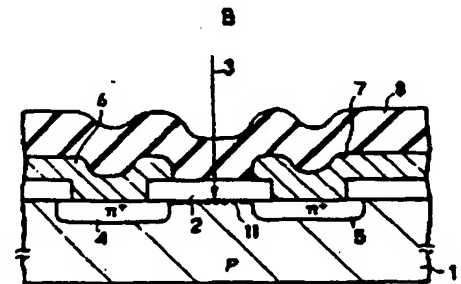
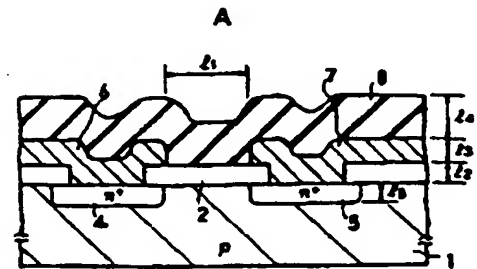
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TITLE : SEMICONDUCTOR MEMORY DEVICE



**ABSTRACT :** **PURPOSE:** To obtain a PROM, which is made conductive or non-conductive only by the radiation of laser after the completion of the device so as to form a program, has a simple structure, and can accomplish high integration, by using the shift of a flat band voltage into the negative direction due to the radiation of the laser, and inverting the interface between the semiconductor and an oxide film.

**CONSTITUTION:** A pair of N<sup>+</sup> type contact regions, i.e., the first contact region 4 and the second contact region 5, having the reverse conductive type with respect to a substrate 1, is formed in a P type silicon substrate, with an interval being provided. An oxide film 2, which strides on the part between the contact regions, is formed on the surface of the substrate 1. Electrode wirings 6 and 7 comprising Al are formed on the contact regions 4 and 5, respectively. At first, the part between the electrode wirings 6 and 7 is not conducted. Then, laser 3 is projected through a PSG 8. The substrate is P type, but Qss is moved to the positive side by the radiation of the laser. As a result, the surface of the substrate is inverted to (n). Thus, the part between the contact regions 4 and 5 is conducted. In this way, the P-ROM is made conductive by projecting the laser, and writing is performed.

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